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ORIGINAL ARTICLE

Parents' concerns and attitudes towards school reopening during COVID-19 pandemic: a cross-sectional survey-Tripoli, Libya, 2021

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ABSTRACT

The issue of school reopening has raised several concerns; therefore, the parent's opinion is essential to consider. This study aimed to evaluate the parent's attitudes and concerns toward school reopening in the COVID-19 era. A cross-sectional survey was performed using in-person self-administered questionnaires, the data was collected in the period between January and April 2021 covering parents' concerns and attitudes toward school reopening. A total of 402 parents participated in the survey. Analysis showed that 56.7% of parents have agreed with school reopening, but 54% have raised some legitimate concerns. Importantly, there was a strong correlation between parents' opinions towards school reopening and their level of education, and their concerns about their children's safety if the school was reopened. Despite parents' concerns, it does seem that slightly over half were in favour of school reopening and would send their children to school only if the schools did apply strict precautions and restriction measures. Sharing parents' views toward school reopening with school leaders and decision-makers is important to assess the feasibility and effectiveness of return to schools and to improve existing prevention programs.

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Libyan parents; school reopening; attitudes; concerns; COVID-19

1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic requires significant lockdown measures to combat its spread. Many countries put in place different measures to the containment of virus spread including school closure and total lockdown. However, as the knowledge of the disease progresses, clinical evidence showed that children are less susceptible to infection than adults, more likely to be asymptomatic, and less likely to be hospitalized and die, and it has been suggested that they are also less likely to spread the virus [1,2].

Although at the beginning of the COVID-19 epidemic, only a small number of children were infected and few suffered from severe illness, children can still bring the disease to their families [3]. Therefore a safe and effective COVID-19 vaccine could provide reasonable benefits such as reducing severe illness in children, decreasing transmission of disease, permitting reopening of schools, and mitigating parents' concerns [4].

On 18 March 2020, the United Nations Educational, Scientific and Cultural Organization (UNESCO) reported that 107 countries, including Libya, had closed their schools due to COVID-19, affecting 862 million children and young people [5,6].

On 13 May 2020, the schools in Libya gradually reopened starting with high schools with emphasis on applying strict preventive measures [7]. In 2021, the Libyan ministry of education had uncertainty about school reopening and the schools were closed and reopened many times according to the epidemic situation. For example, on 23rd January the schools closed for three weeks after a few days from their opening on 3rd January. In March, the ministry of education recommended on the importance of implementation of distance learning [8]. On 23rd March, several municipalities closed all schools as part of a ten-day curfew [9] during the Eta variant peak (B.1.252) [10]. On 9th July, the COVID-19 combating committee in Libya recommended closing all educational institutions until 5th August, coinciding with the third wave of the pandemic; during the Delta surge [11]. However, later in October, the schools were fully reopened again [5,12]. In summary, the schools were closed at the beginning of each new variant wave (Figure 1).

School closures were based on assumptions from the influenza pandemic which showed that reducing social contact between students reduced virus transmission, particularly among school-aged children (5–17 years) [13,14]. However, there was clear evidence if the schools reopened, the cases would surge again;

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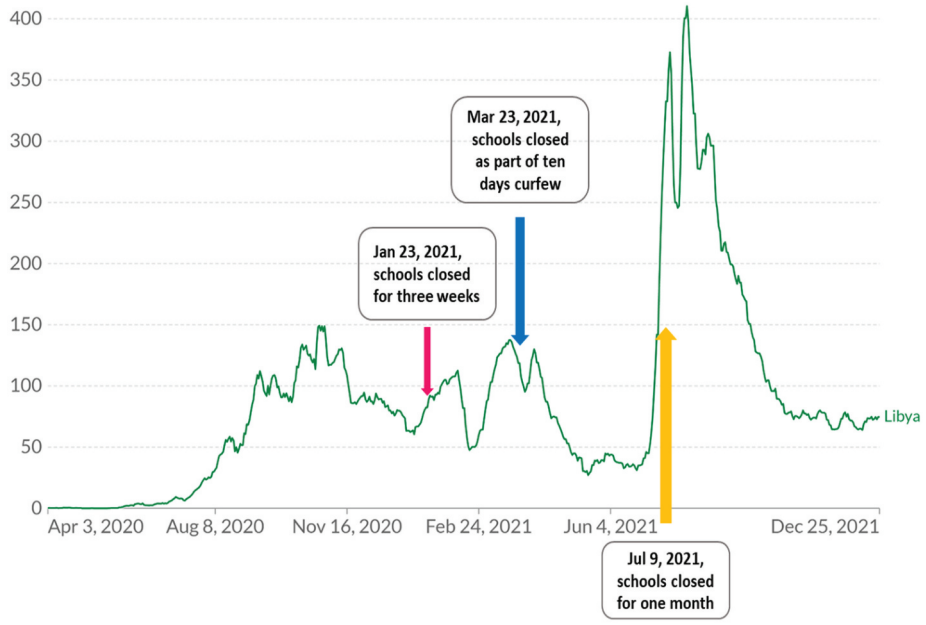

Figure 1. Periods of school closure in Libya mapped on a timescale of new COVID-19 cases and major infection waves. The red arrow points to the first school closure announcement in 2021 by the government after the increase in cases. The Blue arrow indicates the 2nd school closure following the increase caused by the Eta variant. The yellow arrow shows the 3rd school closure announcement in 2021 by the government after the increase in cases due to the Delta variant.

hence there was little consensus on when to reopen or close the schools [14].

There are few data available from published articles on the COVID-19 pandemic to guide school closures by applying school protective practices. Some actions could be used other than full closure; including changing the school organization structure to minimize student gathering (e.g. closing playgrounds, cancelling non-essential activities and meetings, part-time school attendance to decrease the number of students in one day, shortening the school week, and start and lunch or break times though separate groups) [15].

School closure has many negative consequences on children, affecting their social life, their education, and their mental health. As many countries have already entered or are planning of gradual lifting of lockdown measures of social distancing, it seems reasonable that the re-opening of nursery and primary schools could be considered a policy to be implemented at an early stage of recovery efforts, putting in place measures to do it safely [1]. Therefore, the governments have to weigh the benefits over the risks, taking into account psychological, educational, and social consequences for children and their parents [1].

Evidence suggests that public awareness is crucial in the control of pandemics, undoubtedly unplanned schools closure hurts the mental health of parents and their children [16–18], therefore, sharing parent's views toward school reopening is important to assess the feasibility and effectiveness of return to schools, inform school leaders and decision-makers and to improve existing prevention programs. In this study, we aimed to assess the concerns and attitudes of Libyan parents towards school reopening during the COVID-19 pandemic.

2. Methods

2.1. Study design

This study was a cross-sectional survey. A total of 412 Libyan parents living in Tripoli, who are at least 18 years old and had at least one school-aged, or preschool-aged child were recruited. The questionnaires were randomly distributed to four private schools in different areas in Tripoli using simple randomization method by computer-generated random numbers, and to parents from these schools. Data were also collected from one institute (Biotechnology Research Centre). The parents who are ≤ 17 years, and did not consent to the study were excluded (Figure 2).

Samples size was calculated according to a previously published formula [19], adjusting for alpha of 0.05 and 80% power, the sample size required was 384.

The data collection took place from January to April 2021. The survey was administered in Arabic and included sociodemographic characteristics of participants including age, gender, and parent's level of education.

UNICEF Europe & Central Asia Region (ECARO) developed a set of questionnaires to help governments understand parents' information and opinions on COVID-19, and their attitudes towards schools re-

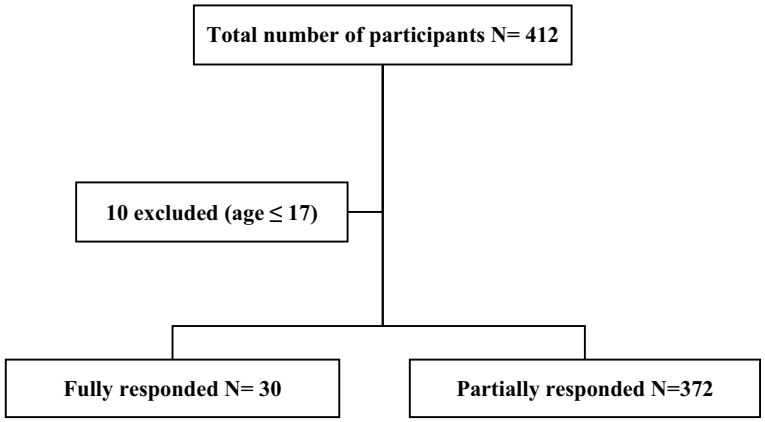

Figure 2. Samples inclusion-exclusion flow chart. Most participants partially responded, but answered the majority of the questions, where the missing responses were between 2-and 67 unanswered questions.

opening [20]. We have adopted this questionnaire, translated it to Arabic, and modified it to suit our local COVID-19 and schools re-opening situation in Libya.

Ethical approval was obtained from the Bioethics Committee at the Libyan Biotechnology Research Centre, and informed consent was taken from all participants.

2.2. Survey tools

The questionnaire was divided into three sections:

1. Personal details of parents
2. COVID-19 knowledge, risk perception and susceptibility
3. Parent's attitudes and concerns toward school re-opening

2.3. Personal details of parents

Included were parents' age, gender, and education level, the number of children in the family at different school levels and parents' previous infection of COVID-19

2.4. COVID-19 knowledge, risk perception and susceptibility

(1) Parents were asked how they shared information about COVID-19 with their children
(2) Parents were asked about their opinion on how dangerous is COVID-19
(3) Parents were asked about their opinion if their children were likely to become sick with COVID-19
(4) Parents were asked about restriction measures they took to protect their children from COVID-19
(5) Parents were asked about their opinion if they would vaccinate their children against COVID-19 if the vaccine became available

2.5. Parent's attitudes and concerns toward school reopening

(1) Parents were asked about their opinion toward school reopening
(2) Parents were asked about their concerns if the school was reopened.
(3) Parents asked whether they planned to return their children to school if the school reopened.
(4) Parents were asked about their concerns if the schools were not reopened.
(5) Parents were asked if they were invited to express their child's opinion about school reopening.

The primary outcome of this study was whether parents agree to school reopening or not in the 2021 school year. The predictors were parent's age, gender, education level, and parent's opinion towards vaccination of their children, parents' opinion on danger of COVID-19, parents' opinion about likelihood of their children becoming sick with COVID-19 and parent's concern about child safety if school was reopened

2.6. Statistical analysis

Statistical analysis was performed using the SPSS version.22 statistical software. Descriptive data were generated for all variables. Chi-squared analyses were used to find correlations between parents' sociodemographic characteristics, and their opinion toward school reopening. A logistic regression model was used to calculate the odds ratios for this relationship. P-value ≤ 0.05 was considered significant. Missing data were not considered for analysis, and no confounding factors were found.

Most participants partially responded (372) but we judged this number sufficient to be included in our analysis as the participants had answered most of the questions.

3. Results

3.1. Sample characteristics

Among the 402 parents the majority were female 62.7% and 37% were male, the mean age of both genders was 42 ± 8.5 years. Nearly 60% of parents have a higher level of education. The majority of them (88.6%) were not previously infected with SARS-CoV-2. Most families had school-aged children (6–17 years) (94%), while families who had children of preschool age (≤5) represented 5% (Table 1).

3.2. Parents' concerns and attitudes towards school reopening

Almost 56.7% of parents supported school reopening, 53.9% of parents were very concerned, and 41% were somewhat concerned about their children's safety if the schools reopened. Importantly, 40.8% of parents agreed to send their children to school, only if the school took restriction measures, and 26.4% of parents agreed to send their children if the school was reopened. Some parents were concerned about decreased cognitive development and ability of thinking of their children if the school remain closed (21.7%).

A reasonable proportion (13%) of parents were invited by schools to express their children's opinions about the decision of school reopening.

3.3. Sharing information about COVID-19, and perception of disease severity

About 38.5% of parents shared the information with their children by talking with them about the seriousness of the disease and how to stay safe. Seventy percent of parents felt that COVID-19 is a very dangerous disease, and 53% thought that their children would attract the COVID-19. Regarding restriction measures applied by parents to protect their children: 96.8% of parents ensured physical distancing for their children, 97.7% ensured wearing of masks and gloves, 97% ensured frequent hand washing, 93% recommended avoiding playing with other children, 92.5% recommended staying at home as much as possible, and 96% did not recommend participation in large gatherings. It is noteworthy that 53.7% of parents agreed to vaccinate their children if the vaccine became available.

Table 1. Characteristics of parents participating in the survey.

Participant characteristics	N (%), Total 402
Parent's gender	
Female	237 (62.7)
Male	141 (37.3)
Number of Children in the school level (year)	
Pre-school	17 (5)
School age	309 (94)
Education	
Secondary school or less	21 (6)
Intermediate and higher diploma	118 (33.6)
Higher level (University or higher)	212 (60.4)
Previous infection with SARS CoV-2	
Yes	42 (11)

Bivariate analysis using chi-square for independent variables (Table 2) showed that parents' opinion towards school reopening was statistically correlated with their opinion that COVID-19 is a dangerous disease (P-value = 0.049). Despite these findings, it was interesting to find out that both groups were still in favour of school reopening. About 60% of parents with higher of level education supported reopening of schools. Slightly over third of parents who were very concerned about their children safety and 83.6% of those who were somewhat concerned agreed with reopening of school. In addition, there was a strong correlation between parents' opinions towards school reopening, their level of education (P-value ≤ 0.001), and with their concerns for children's safety if the school reopened (P- values ≤ 0.001).

All other variables showed no statistical correlation with parents' opinions toward school reopening. Surprisingly, no correlation was found between parents' opinions towards school reopening and the age of their children, or their thinking that their child was likely to become infected.

Results from logistic regression showed that the parent's opinion towards school reopening was only predicted by their level of education (P-value = 0.005). Highly educated parents were 9.1 times more likely to support school reopening (95% CI, 1.96–42.48). All other studied predictors showed no significant impact on parent's opinions towards school reopening (Table 3).

4. Discussion

Since many countries have already entered or were planning gradual lifting of lockdown measures, re-opening of schools seemed reasonable to be considered at an early stage of recovery efforts with appropriate planning. The governments have to weigh the benefits over the risks, taking into account psychological, educational, and social consequences for children and their parents [1]. Therefore, we aimed to evaluate parents' attitudes and concerns towards school reopening and identify main predictors for their attitude.

Parent's opinion is important to provide a decision to schools whether to allow their children back to school or not [21]. Their opinion will also help decision-makers in planning for appropriate timing of school re-opening. Furthermore, parents' concerns should be conveyed to school administration and the ministry of education to apply appropriate

Table 2. Chi-square analysis for associations between parents' opinion towards school reopening and their attitudes and concerns.

	Do you agree with reopening the schools at this time?				
	Yes (%)	No (%)	Don't know (%)	Total (%)*	P- value
Age					
<40 yrs	60 (55.6)	34 (31.5)	14 (13)	108 (30.7)	0.480
40–50 yrs	103 (55)	68 (36.4)	16 (8.6)	187 (53.2)	
>50 yrs	36 (64.3)	16 (28.6)	4 (7)	56 (15.9)	
Total	199 (56.7)	118 (33.6)	34 (9.7)	351	
Gender					
Female	121 (52.6)	85 (37)	24 (10.4)	230(62.6)	0.094
Male	88 (64.2)	38 (27.7)	11 (8)	137(37.3)	
Total	209 (56.9)	123 (33.5)	35 (9.5)	367	
In your opinion, how dangerous is COVID-19?					
Very dangerous	145 (53.3)	103 (37.9)	24 (8.8)	272 (70.1)	0.049
Somewhat dangerous	68 (63.6)	26 (24.3)	13 (12)	107 (27.5)	
Not dangerous	6 (100)	0(0)	0 (0)	6 (1.5)	
Don't Know	1 (33.3)	2 (66.7)	0 (0)	3 (0.77)	
Total	220 (56.7)	131(33.8)	37 (9.5)	388	
Do you think your child is likely to become sick with COVID-19					
Yes	117 (57.4)	72 (35.5)	15 (7.4)	204 (53.1)	0.534
No	14 (60.9)	8 (34.8)	1 (4.3)	23 (5.9)	
Don't Know	87 (55.4)	51 (32.5)	19 (12)	157 (40.8)	
Total	218 (56.8)	131 (34)	35 (9)	384	
Your concern about child safety, if school reopened					
Very concerned	65 (31.9)	117 (57.4)	22 (10.8)	204 (53.26)	≤0.0001
Somewhat concerned	133 (83.6)	13 (8.2)	13 (8.2)	159 (41.51)	
Not concerned	8 (100)	0 (0)	0 (0)	8 (2.08)	
Don't Know	9 (75)	1 (8.3)	2 (16.7)	12 (3.13)	
Total	215 (56)	131 (34.2)	37 (9.7)	383	
EducationSecondary school or less	5 (25)	8 (40)	7 (35)	20 (5.8)	≤0.0001
Intermediate and higher diploma	64 (56.6)	41 (36.3)	8 (7)	113 (33.2)	
Higher degree	124 (59.9)	67 (32.4)	16 (7.7)	207 (60.8)	
Total	193 (56.8)	116 (34)	31 (9)	340	
School age of childPre-school age	9 (52.9)	6 (35.3)	2 (11.8)	17 (5)	0.922
School age	174 (56.3)	107 (34.6)	28 (9)	309 (94)	
Total	183 (56)	113 (34.7)	30 (9.2)	326	

*Percentage totals may not equal 100% due to rounding.

restriction measures and discuss other alternatives such as distance learning.

Our findings showed that 56.7% of parents agreed with school reopening but they were concerned (54%). These findings were in concordance with other studies [22,23].

It was notable that highly educated parents supported school reopening. However, most parents who supported school reopening were also concerned about their children's safety. One of the most important concerns was about the decrease of cognitive development of their children which might explain their support of school reopening. A study by Hawrilenko and colleagues reported that remote learning in the COVID-19 era was associated with mental health problems for older children and children from families with low income. Therefore; to balance between risks and benefits of school reopening, these findings support safe in-person school attendance which may mitigate parents' concerns related to school closure in this pandemic [24].

Moreover, social distancing has a harmful effect on children's health, and their activities decreased but did not stop completely, which was particularly seen among older children and those whose parents disagreed with school closures [25,26].

Unexpectedly, parents were supportive of school reopening regardless of their children's age. Evidence from school-based studies revealed that children (<10 years) are safe to be at school, whereas, older children (10–19 years) may transmit the infection. [27]. Further, Soriano-Arandes reported that children, whether symptomatic or not, did not greatly contribute to household clusters of infection and were unlikely to be major drivers of the pandemic, even when schools were open [28]. This had implications on parents' attitudes and concerns, and encouraged them to allow their children back to school.

Although most of the parents felt that COVID-19 was a dangerous disease, and thought that their children might be more likely to be infected, they agreed to send their children to school, if the school has taken restriction measures. A study by Gilbert and colleagues [23] found that non-white parents were less comfortable with school reopening, and were concerned about school safety measures. They worried that their children might contract COVID-19 from the school and brought the disease home [23]. Another study showed that parents planned to keep their children at home because they feared COVID-19 [29].

Table 3. Ordered logistic regression between parent's opinion towards school reopening and their attitudes, concerns and sociodemographic factors.

Characteristics	P-value	OR	95% CI
Age (≤30 vs >30)	0.942	1.040	0.358–3.022
Gender (Male vs female)	0.082	0.621	0.363–1.062
Do you agree to vaccinate your child? (Yes vs No)	0 .826	1.061	0.628–1.790
Education (Higher vs lower education)	0.005	9.144	1.968–42.483
Do you think that COVID −19 is a dangerous disease? (Dangerous vs Not dangerous)	0.707	0.710	0.119–4.239
Do you think your child is likely to become sick with COVID-19? (Yes vs No)	0.366	1.265	0.760–2.107
Your concern about child safety, if school reopened (Concerned Vs Not concerned)	0.091	6.153	0.747–50.696

Abbreviations: CI = confidence interval; OR = Odds Ratio, P ≤ 0.05 considered significant

Our findings have important implications for policy makers, since parents were concerned that schools would not apply appropriate restriction measures, and therefore schools should be closely monitored to ensure proper application. This might be a potential barrier that might affect students' learning during the pandemic. We suggest that safety measures have to be mandatory so that parents feel more comfortable to allow their children return to school safely.

Our findings showed that slightly over half of parents agreed to vaccinate their children, which reflected their concerns about their children attracting COVID-19. This was consistent with studies in Italy [22] and China [30] which showed parents' willingness to vaccinate their children. In contrast, another study assessing Turkish parents' willingness to vaccinate their children showed a much lower response [3]. These findings have important implications about parents' acceptability to give the vaccine to their children which will contribute to control of the pandemic.

Our study has some limitations. First: the data were self-reported; which may subject the responses to social desirability bias, second: this study included a small number of participants collected from the Tripoli region only. Finally, with the continuous emergence of variants of concern of SARS-CoV-2, parents' opinion towards school reopening might change.

Important questions which should be addressed in future studies include confidence of parents in schools to apply protective measures and options and barriers for online learning.

5. Conclusion

To summarize, parents were concerned but supported school reopening. Parents' concerns about their children's safety, education and well-being require policymakers and school leaders to communicate about the adequacy of restriction measures applied by the schools. Sharing parents' opinions and concerns about school reopening is necessary to return to schools in a safe manner.

We think that this survey adds valuable insights into parental views and concerns towards school reopening. We recommend that school reopening begin only when the health and safety measures are properly implemented.

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